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Figure 1 Conceptual System Overview

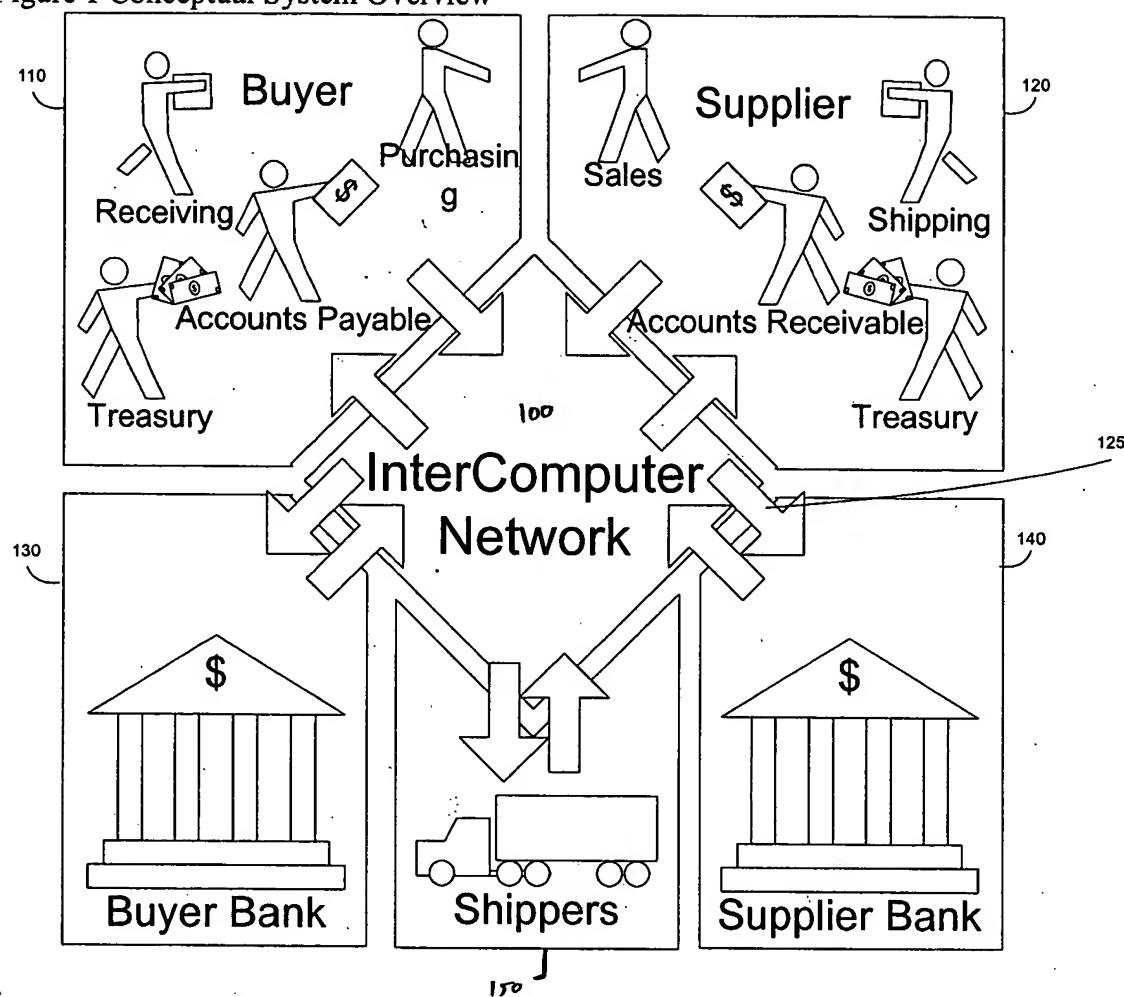


Figure 1a

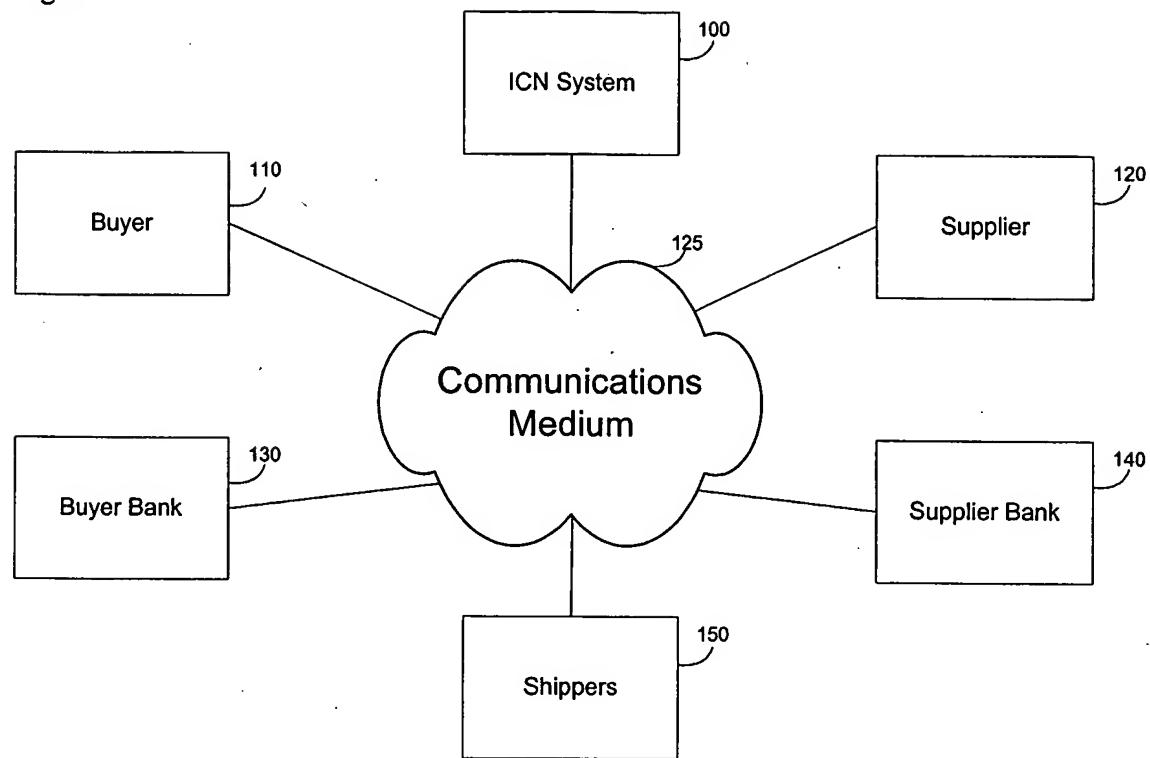


Figure 2

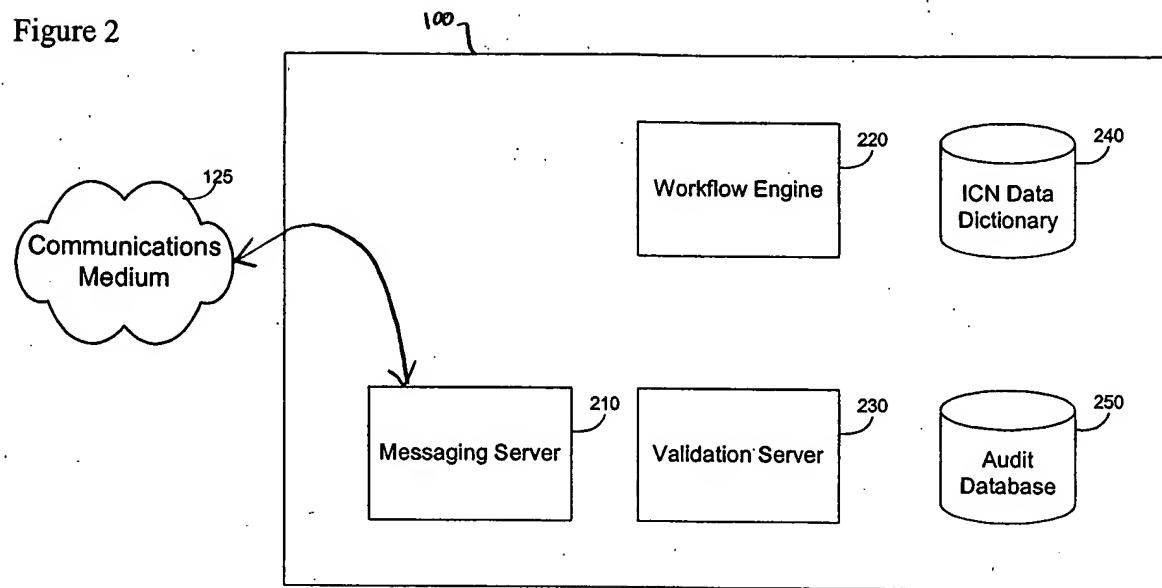


Figure 3

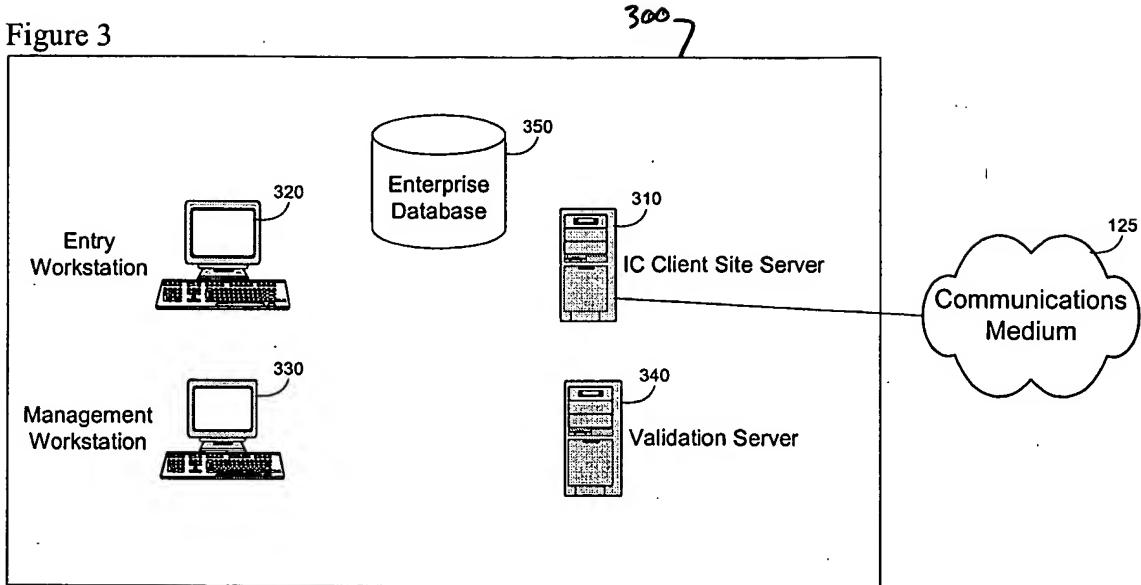


Figure 4. High Level Messaging Process Diagram – Message Creation and Transmission

| Sender of message | ICN High Level Process | Step Number |
|--|---|-------------|
| (Logon) | VPN established or activated with sender | 1 |
| Entry workstation login | | 2 |
| Message created | | 3 |
| Message audit file created | | 4 |
| | Message audit file received | 5 |
| Signed & encrypted message sent to ICN | | 6 |
| | Message received | 7 |
| | Validity of message checked by comparing audit file and encrypted message | 8 |
| | Message validation response created | 9 |
| Message validation response received | | 10 |
| | VPN inactive | 11 |

Figure 5. High Level Messaging Process Diagram – Send a message with Approval

| Sender of message | ICN High Level Process | Step Number |
|---|--|-------------|
| (Logon) | VPN established or activated with sender | 1 |
| Entry workstation login | | 2 |
| Message created | | 3 |
| Message audit file created | | 4 |
| | Message audit file received | 5 |
| Management workstation login | | 6 |
| Message approval created | | 7 |
| Message approval audit file created | | 8 |
| | Message approval audit file received | 9 |
| Signed & encrypted message sent to ICN | | 10 |
| | Message received | 11 |
| Signed & encrypted message approval sent to ICN | | 12 |
| | Message approval received | 13 |
| | Validity of message checked by comparing message audit file, encrypted message, message approval audit file, and encrypted message approval. | 14 |
| | Message validation response created | 15 |
| Message validation response received | | 16 |
| | VPN inactive | 17 |

Figure 6. High Level Messaging Process Diagram – Receive a message

| ICN High Level Process | Recipient of message | Step Number |
|---|--|-------------|
| VPN established or activated with receiver | (Logon) | 1 |
| | Entry workstation login | 2 |
| | Message received | 3 |
| | Message receipt audit file created | 4 |
| Message receipt audit file created | | 5 |
| | Signed & encrypted message receipt acknowledgement sent to ICN | 6 |
| Message receipt acknowledgement received | | 7 |
| Validity of response checked by comparing message receipt audit file and encrypted message receipt acknowledgement. | | 8 |
| Message validation response created | | 9 |
| | Message validation response received | 10 |
| VPN inactive | | 11 |

Figure 7. High Level Messaging Process Diagram – Receive a Message with Approval

| ICN High Level Process | Recipient of message | Step Number |
|---|---|-------------|
| VPN established or activated with receiver | (Logon) | 1 |
| | Entry workstation login | 2 |
| | Message received | 3 |
| | Message receipt audit file created | 5 |
| Message receipt audit file created | | 6 |
| | Management workstation login | 7 |
| | Message receipt approved | 8 |
| | Message receipt approval audit file created | 9 |
| Message receipt approval audit file created | | 10 |
| | Signed & encrypted message receipt acknowledgement sent to ICN | 11 |
| Message receipt acknowledgment received | | 12 |
| | Signed & encrypted message receipt approval acknowledgement sent to ICN | 13 |
| Message receipt approval acknowledgment received | | 14 |
| Validity of response checked by comparing message receipt audit file, encrypted message receipt acknowledgement, message receipt approval audit file, and encrypted message receipt approval acknowledgement. | | 15 |
| Message validation response created | | 16 |
| | Message validation response received | |
| VPN inactive | | 17 |

Figure 8. Low Level Messaging Process Diagram – Reject a Message

| Sender of message | ICN High Level Process | Recipient of message | Step Number |
|-------------------------|---|---|-------------|
| | VPN established or activated with receiver | (Logon) | 1 |
| | | Entry workstation login | 2 |
| | | Message received | 3 |
| | | Message reject audit file created | 4 |
| | Message reject audit file created | | 5 |
| | | Signed & encrypted message reject sent to ICN | 6 |
| | Message reject received | | 7 |
| | Validity of response checked by comparing message reject audit file and encrypted message reject acknowledgement. | | 8 |
| | Message validation response created | | 9 |
| | | Message validation response received | 10 |
| | Message reject signed and encrypted and sent to sender | | 11 |
| | VPN established or activated with receiver | (Logon) | 12 |
| Message reject received | | | 13 |
| | VPN inactive | | 14 |

Figure 9. Low Level Messaging Process Diagram – Reject with Approval

| Sender of message | ICN High Level Process | Recipient of message | Step Number |
|-------------------------|---|---|-------------|
| | VPN established or activated with receiver | (Logon) | 1 |
| | | Entry workstation login | 2 |
| | | Message received | 3 |
| | | Message reject audit file created | 4 |
| | Message reject audit file created | | 5 |
| | | Signed & encrypted message reject sent to ICN | 6 |
| | Message reject received | | 7 |
| | | Entry workstation login | 2 |
| | | Message received | 3 |
| | | Message reject audit file created | 4 |
| | Message reject audit file created | | 5 |
| | | Signed & encrypted message reject sent to ICN | 6 |
| | Message reject received | | 7 |
| | Validity of response checked by comparing message reject audit file and encrypted message reject acknowledgement. | | 8 |
| | Message validation response created | | 9 |
| | | Message validation response received | 10 |
| | Message reject signed and encrypted and sent to sender | | 11 |
| | VPN established or activated with receiver | (Logon) | 12 |
| Message reject received | | | 13 |
| | VPN inactive | | 14 |

Figure 10. Request for Quote

| Buyer Transaction State | ICN Transaction State | Supplier Transaction State | Step Number |
|-----------------------------------|-----------------------|----------------------------|-------------|
| Request for quote (RFQ) initiated | RFQ Initiated | | 1 |
| | RFQ Forwarded | RFQ Received | 2 |
| | Quote received | Quote sent | 3 |
| Quote received | Quote forwarded | | 4 |

Figure 11. Order Process Diagram

| Buyer Transaction State | ICN Transaction State | Supplier Transaction State | Step Number |
|-------------------------------------|--------------------------------------|-------------------------------------|-------------|
| Order initiated | Order Initiated | | 1 |
| | Order Forwarded | Order Received | 2 |
| Order Related Chat Message Sent | Order Related Chat Message Received | | 3 |
| | Order Related Chat Message Forwarded | Order Related Chat Message Received | 4 |
| | Order Related Chat Message Received | Order Related Chat Message Sent | 5 |
| Order Related Chat Message Received | Order Related Chat Message Forwarded | | 6 |
| Order Updated | Order Update Received | | 7 |
| | Order Update Forwarded | Order Update Received | 8 |
| | Order Acknowledgement Received | Order Acknowledged | 9 |
| Order Acknowledged | Order Acknowledgement Sent | | 10 |

Figure 12. Order Process Diagram – Reject Order

| Buyer Transaction State | ICN Transaction State | Supplier Transaction State | Step Number |
|---|------------------------|----------------------------|-------------|
| Orders can be rejected by the supplier at any point in the process after the Supplier has received the initial order and before an acknowledgement is made. | | | 1 |
| | Order Reject Received | Order Rejected | 2 |
| Order Rejected | Order Reject Forwarded | | 3 |

Figure 13. Invoice Process Diagram

| Buyer Transaction State | ICN Transaction State | Supplier Transaction State | |
|--|---|--|-----------|
| | Invoice Received | Invoice Initiated | 1 |
| Invoice Received | Invoice Forwarded | | 2 |
| | Invoice Related Chat Message Received | Invoice Related Chat Message Sent | 3 |
| Invoice Related Chat Message Received | Invoice Related Chat Message Forwarded | | 4 |
| Invoice Related Chat Message Sent | Invoice Related Chat Message Received | | 5 |
| | Invoice Related Chat Message Forwarded | Invoice Related Chat Message Received | 6 |
| | Invoice update received | Invoice Updated | 7 |
| Invoice Updated | Invoice update forwarded | | 8 |
| Invoice Acknowledged | Invoice acknowledgement received | | 9 |
| | Invoice acknowledgement forwarded | Invoice Acknowledged | 10 |

Figure 14. Invoice Process Diagram – Reject Invoice

| Buyer Transaction State | ICN Transaction State | Supplier Transaction State | |
|--|---------------------------------|----------------------------|---|
| | | | 1 |
| Invoice can be rejected by the buyer at any point in the invoice process before an acknowledgement is made. | | | 2 |
| Invoice Rejected | Invoice reject received | | 3 |
| | Invoice reject forwarded | Invoice rejected | 4 |

Figure 15. Delivery Process Diagram

| Buyer Transaction State | ICN Transaction State | Supplier Transaction State | Shipper State | Step Number |
|---------------------------------------|---|--|--|-------------|
| | Delivery Ticket Received | Delivery Ticket Sent | | 1 |
| | Delivery Ticket Forwarded | | Delivery Ticket Received | 2 |
| | Delivery Ticket Acknowledgement Received | | Delivery Ticket Acknowledgment Sent | 3 |
| | Delivery Ticket Acknowledgement Forwarded | Delivery Ticket Acknowledgement Received | | 4 |
| Delivery Ticket Notification Received | Delivery Ticket Notification Sent | | | 5 |
| | Title Transfer Received | Title Transfer Sent | | 6 |
| | Title Transfer Forwarded | | Title Transfer Received | 7 |
| | Title Transfer Acknowledgement Received | | Title Transfer Acknowledged | 8 |
| | Title Transfer Acknowledgement Forwarded | Title Transfer Acknowledgement Received | | 9 |
| | Status Update Received | | Status Update sent | 10 |
| Status Update Received | Status Update Forwarded | Status Update Received | | 11 |
| | Delivery Ticket Received | | Delivery Ticket Sent | 12 |
| Delivery Ticket Received | Delivery Ticket Forwarded | | | 13 |
| Delivery Ticket Acknowledgment Sent | Delivery Ticket Acknowledgement Received | | | 14 |
| | Delivery Ticket Acknowledgement Forwarded | | Delivery Ticket Acknowledgement Received | 15 |
| | Delivery Ticket Notification Sent | Delivery Ticket Notification Received | | 16 |
| | Title Transfer Received | | Title Transfer Sent | 17 |

FIGURE 15-2

| | | | | |
|-------------------------------|--|-----------------------------------|---|----|
| Title Transfer Received | Title Transfer Forwarded | | | 18 |
| Title Transfer Acknowledged | Title Transfer Acknowledgement Received | | | 19 |
| | Title Transfer Acknowledgement Forwarded | | Title Transfer Acknowledgement Received | 20 |
| Delivery Acknowledgement Sent | Delivery Acknowledgement Received | | | 21 |
| | Delivery Acknowledgement Forwarded | Delivery Acknowledgement Received | Delivery Acknowledgement Received | 22 |

Figure 16. Delivery Process Diagram – Rejected by Shipper

| Buyer Transaction State | ICN Transaction State | Supplier Transaction State | Shipper State | Step Number |
|--------------------------------|----------------------------|----------------------------|--|-------------|
| | | | Deliveries can be rejected by the shipper any time after a Delivery Ticket or a Title Transfer is received and before the Title Transfer is Acknowledged. If there is not title transfer to the shipper, then the rejection must occur before the Delivery Ticket is acknowledged. | 1 |
| | Delivery Reject Received | | Delivery Reject Sent | 2 |
| | Delivery Reject Forwarded | Delivery Reject Received | | 3 |
| Delivery Cancellation Received | Delivery Cancellation Sent | | | 4 |

Figure 17. Delivery Process Diagram – Rejected by Receiver

| Buyer Transaction State | ICN Transaction State | Supplier Transaction State | Shipper State | Step Number |
|--|----------------------------|--------------------------------|--------------------------|-------------|
| Deliveries can be rejected by the Buyer any time after a Delivery Ticket or a Title Transfer is received and before the Title Transfer is Acknowledged. If there is not title transfer to the shipper, then the rejection must occur before the Delivery Ticket is acknowledged. | | | | 1 |
| Delivery Reject Sent | Delivery Reject Received | | | 2 |
| | Delivery Reject Forwarded | | Delivery Reject Received | 3 |
| | Delivery Cancellation Sent | Delivery Cancellation Received | | 4 |

Figure 18. Payment Process Diagram

| Buyer | Buyer Bank | ICN | Supplier Bank | Supplier | Step Number |
|--|---|---|-------------------------------------|---------------------------|-------------|
| Payment Request Made | | Received Payment Request | | | 1 |
| | Receive Payment Request | Forward Payment Request | | | 2 |
| | | Forward Payment Notice | | Received Payment Notice | 3 |
| | Send Payment Response | Payment Response Received from Buyer Bank | | | 4 |
| Payment Response Received | | Payment Response Forwarded to Buyer | | | 5 |
| | Send Payment Request to Supplier Bank | Payment Request Received from Buyer Bank | | | 6 |
| | | Payment Request Forwarded to Supplier Bank | Received Payment Request | | 7 |
| Notice of Payment Request Forwarded to Supplier Bank | | Payment Request Forwarding Notification sent to Buyer | | | 8 |
| | | Payment Response received from Supplier Bank | Send Payment Response to Buyer Bank | | 9 |
| | Received Supplier Bank Payment Response | Payment Response forwarded to Buyer Bank | | | 10 |
| Supplier Bank Payment Response received | | Payment Response forwarded to Buyer | | | 11 |
| | | Payment Response Forwarded to Supplier | | Payment Response Received | 12 |
| | | Remittance | | Remittance | 13 |

FIGURE 18-2

| | | Forwarded to Supplier | | Received | |
|----------------------------------|--|-----------------------------------|--|---------------------------------------|----|
| | | Payment Acknowledgement received | | Payment Acknowledgement sent to Buyer | 14 |
| Payment Acknowledgement received | | Payment Acknowledgement forwarded | | | 15 |

Figure 19. Payment Process Diagram – Rejected by Buyer Bank

| Buyer | Buyer Bank | ICN | Supplier Bank | Supplier | Step Number |
|--------------------------------------|--|--|---------------|-------------------------------|-------------|
| Payment Request Made | | Received Payment Request | | | 1 |
| | Receive Payment Request | Forward Payment Request | | | 2 |
| | | Forward Payment Notice | | Received Payment Notice | 3 |
| | Send Payment Response Payment Response is to reject payment | Payment Response (rejected) Received from Buyer Bank | | | 4 |
| Payment Response (rejected) Received | | Payment Response Forwarded to Buyer | | | 5 |
| | | Payment Cancellation sent to Supplier | | Payment Cancellation Received | 6 |

Figure 20. Payment Process Diagram – Rejected by Supplier Bank

| Buyer | Buyer Bank | ICN | Supplier Bank | Supplier | Step Number |
|--|--|---|--|-------------------------|-------------|
| Payment Request Made | | Received Payment Request | | | 1 |
| | Receive Payment Request | Forward Payment Request | | | 2 |
| | | Forward Payment Notice | | Received Payment Notice | 3 |
| | Send Payment Response | Payment Response Received from Buyer Bank | | | 4 |
| Payment Response Received | | Payment Response Forwarded to Buyer | | | 5 |
| | Send Payment Request to Supplier Bank | Payment Request Received from Buyer Bank | | | 6 |
| | | Payment Request Forwarded to Supplier Bank | Received Payment Request | | 7 |
| Notice of Payment Request Forwarded to Supplier Bank | | Payment Request Forwarding Notification sent to Buyer | | | 8 |
| | | Payment Response (Reject) received from Supplier Bank | Send Payment Response (Reject) to Buyer Bank | | 9 |
| | Received Supplier Bank Payment Response (Reject) | Payment Response (Reject) forwarded to Buyer Bank | | | 10 |
| Supplier Bank Payment Response (Reject) received | | Payment Response (reject) forwarded to Buyer | | | 11 |

Figure 20-1

| payment cancelled | | | | | |
|----------------------|--|---|--|-------------------------------------|----|
| | | Payment Cancellation sent to Supplier | | Payment Cancellation Received | 12 |

Figure 21. Payment Process Diagram – Rejected by Supplier before payment request is sent to Buyer Bank

| Buyer | Buyer Bank | ICN | Supplier Bank | Supplier | Step Number |
|-----------------------------|-------------------------|----------------------------|---------------|-------------------------|-------------|
| Payment Request Made | | Received Payment Request | | | 1 |
| | Receive Payment Request | Forward Payment Request | | | 2 |
| | | Forward Payment Notice | | Received Payment Notice | 3 |
| | | Payment Rejection Received | | Payment Rejected | 4 |
| Payment Rejection Forwarded | | Forward Payment Rejection | | | 5 |

Figure 22. Payment Process Diagram – Rejected by Supplier after payment request is sent to Buyer Bank

| Buyer | Buyer Bank | ICN | Supplier Bank | Supplier | Step Number |
|--|---|---|-------------------------------------|-------------------------|-------------|
| Payment Request Made | | Received Payment Request | | | 1 |
| | Receive Payment Request | Forward Payment Request | | | 2 |
| | | Forward Payment Notice | | Received Payment Notice | 3 |
| | Send Payment Response | Payment Response Received from Buyer Bank | | | 4 |
| Payment Response Received | | Payment Response Forwarded to Buyer | | | 5 |
| | Send Payment Request to Supplier Bank | Payment Request Received from Buyer Bank | | | 6 |
| | | Payment Request Forwarded to Supplier Bank | Received Payment Request | | 7 |
| Notice of Payment Request Forwarded to Supplier Bank | | Payment Request Forwarding Notification sent to Buyer | | | 8 |
| | | Payment Response received from Supplier Bank | Send Payment Response to Buyer Bank | | 9 |
| | Received Supplier Bank Payment Response | Payment Response forwarded to Buyer Bank | | | 10 |
| Supplier Bank Payment Response received | | Payment Response forwarded to Buyer | | | 11 |
| | | Payment Response | | Payment Response | 12 |

FIGURE 22-2

| | | Forwarded to Supplier | | Received | |
|-------------------------|--|--|--|---------------------|--|
| | | Remittance Forwarded to Supplier | | Remittance Received | |
| | | Payment Reject received | | Payment Reject sent | |
| Payment Reject Received | | Payment Reject Forwarded | | | |
| | | Payment Reversal initiated. Money is moved from Supplier Bank Back to Buyer Bank using the same method that money was moved to the Supplier Bank. Buyer cannot reject that movement of money. | | | |

Figure 23. Authentication Process

| Sender Workstation | Sender ICN client site application. server | Sender ICN client site validation server | ICN process | Recipient | Step Number |
|--|--|---|--|-----------|----------------|
| | | Logon (Server to server) | | | 1 |
| | | | Establish VPN with buyer | | 2 |
| Login (Client to server) | Login (Client to server) | Session registration and authentication for individual accountability: ICN remote site application server to security server | | | 3 |
| Creates order (or request for quote) | | | | | 4 |
| Local audit once order ready | | | | | 5 |
| | | | Receipt of WS audit file then audit file decryption and database file | | 6 |
| WS send encrypted data to app. Server | | | | | 7 |
| | Decryption of order data then Reflection to management WS | | | | 8 |
| Management WS validates order | | | | | 9 |
| Sends order | | | | | 10 |
| Local audit once | | | | | 11 |

Figure 23-2

| | | | |
|---------------------------------------|---|---|----|
| order validated | | Receipt of WS audit file then audit file decryption and data base file | 12 |
| WS send encrypted data to app. Server | Decryption of order data then... sent to validation server with Supplier's ID | | 13 |
| | Decryption of order data then | | 14 |
| | Option 1-total confidentiality: Negotiate Supplier's symmetric key for data exchange and encrypt | Option-total confidentiality: Negotiate Supplier's symmetric key for data exchange and encrypt | 15 |
| | Option 2- data path through: Sign hash of the message with ICN public key | Option-total confidentiality: Give symmetric key for data exchange and encrypt | 16 |
| | | | 17 |
| | | Order received | 18 |
| | | Order decryption and data integrity resolution via hash comparision and data audit comparison completed | 19 |
| | | Order data acknowledged | 20 |

FIGURE 23-3

| | | | | |
|--|--------------------------|------------------------|----------------|----|
| | | with receipt message | | |
| | | Order and receipt sent | | 21 |
| | Receipt message received | | Receives order | 22 |
| | | VPN inactive | | 23 |

Figure 24

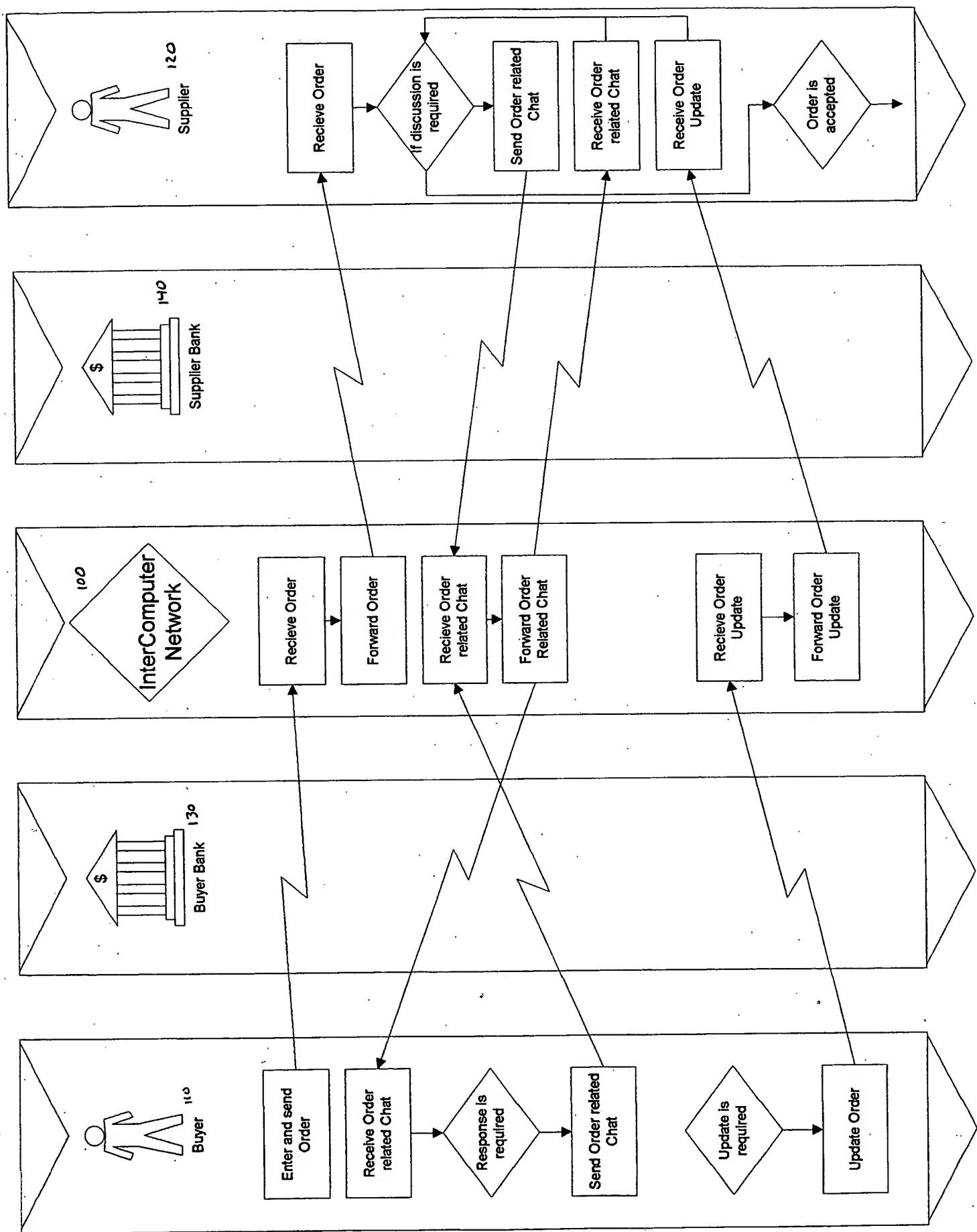


Figure 24-2

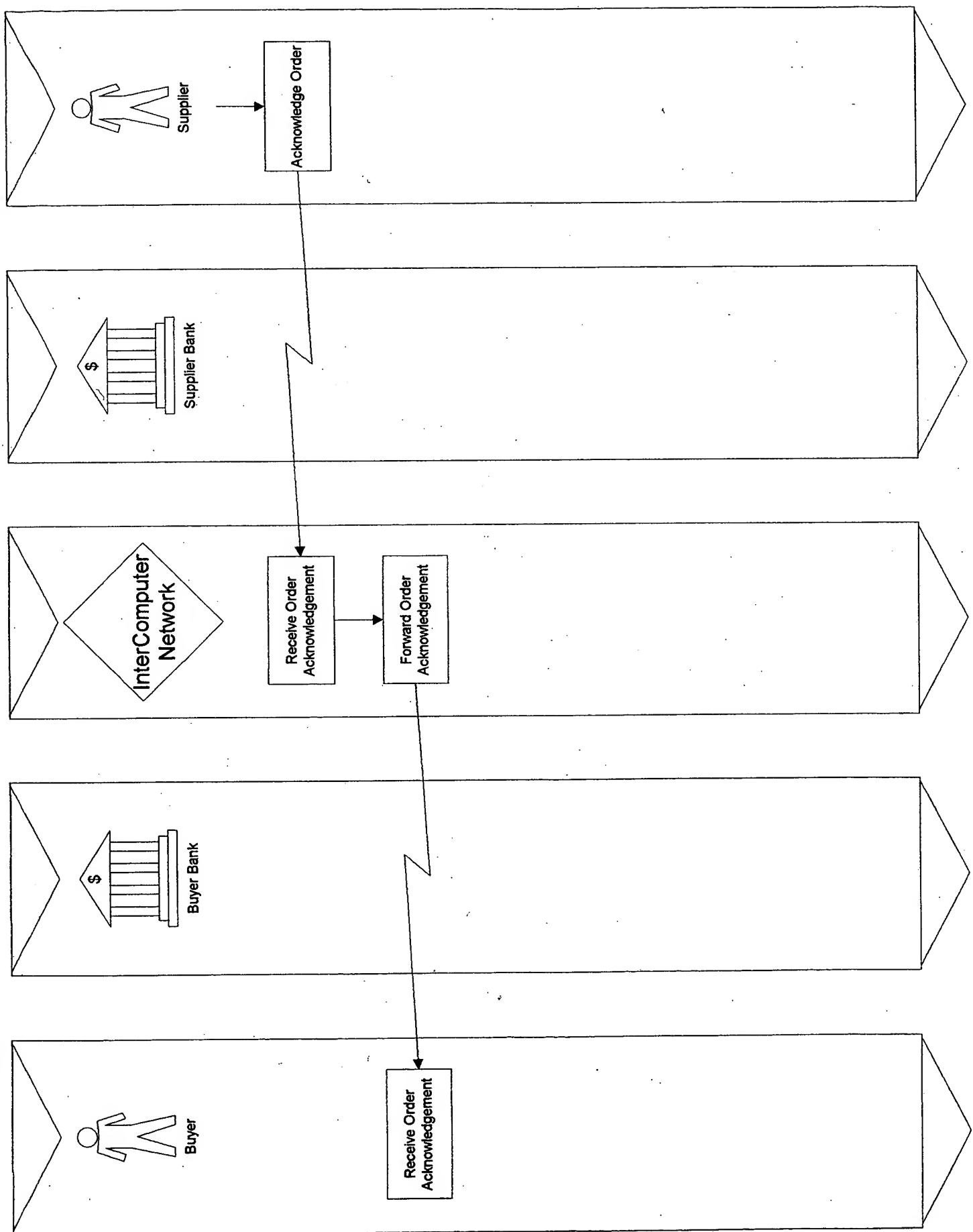


Figure 25

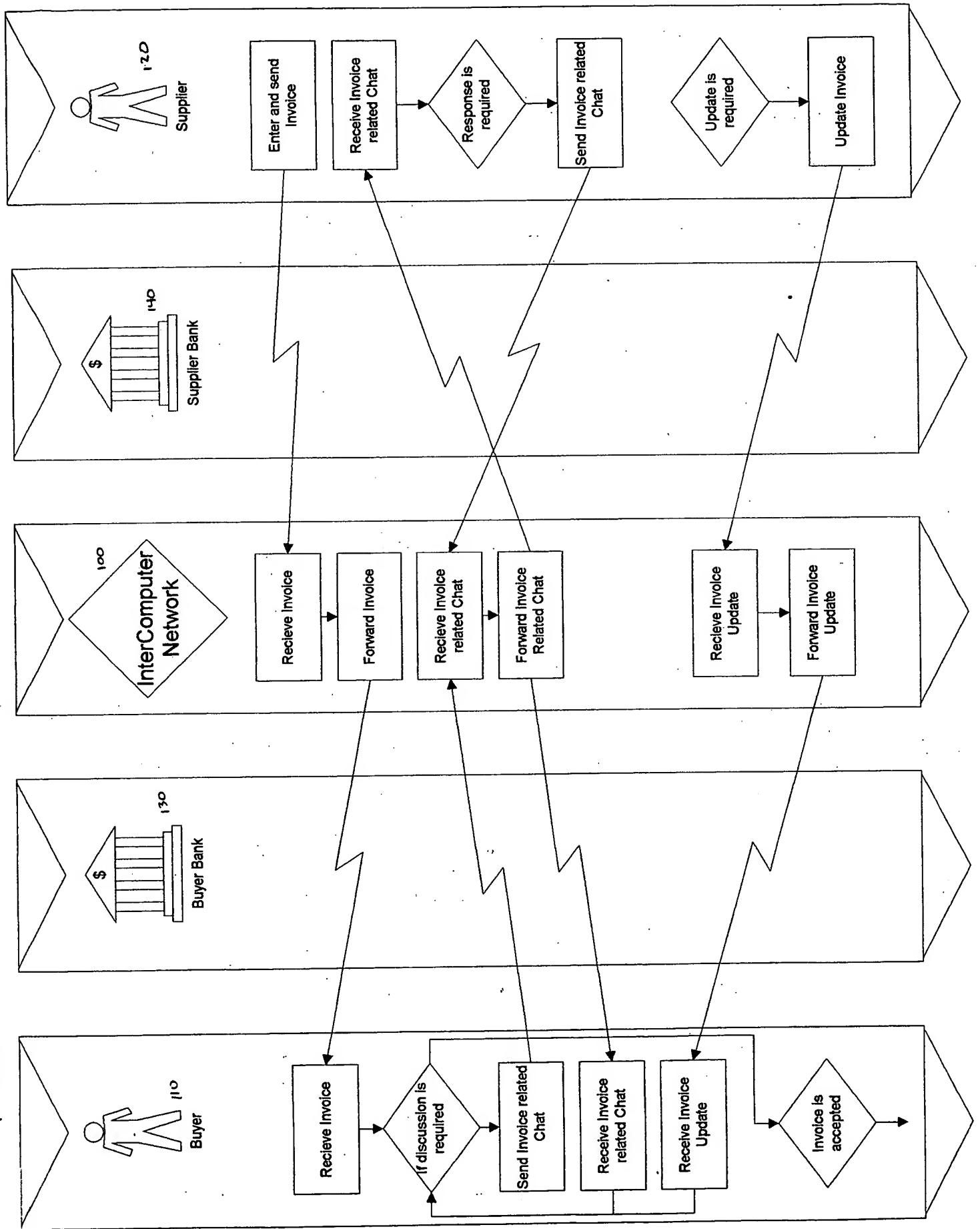


Figure 25-2

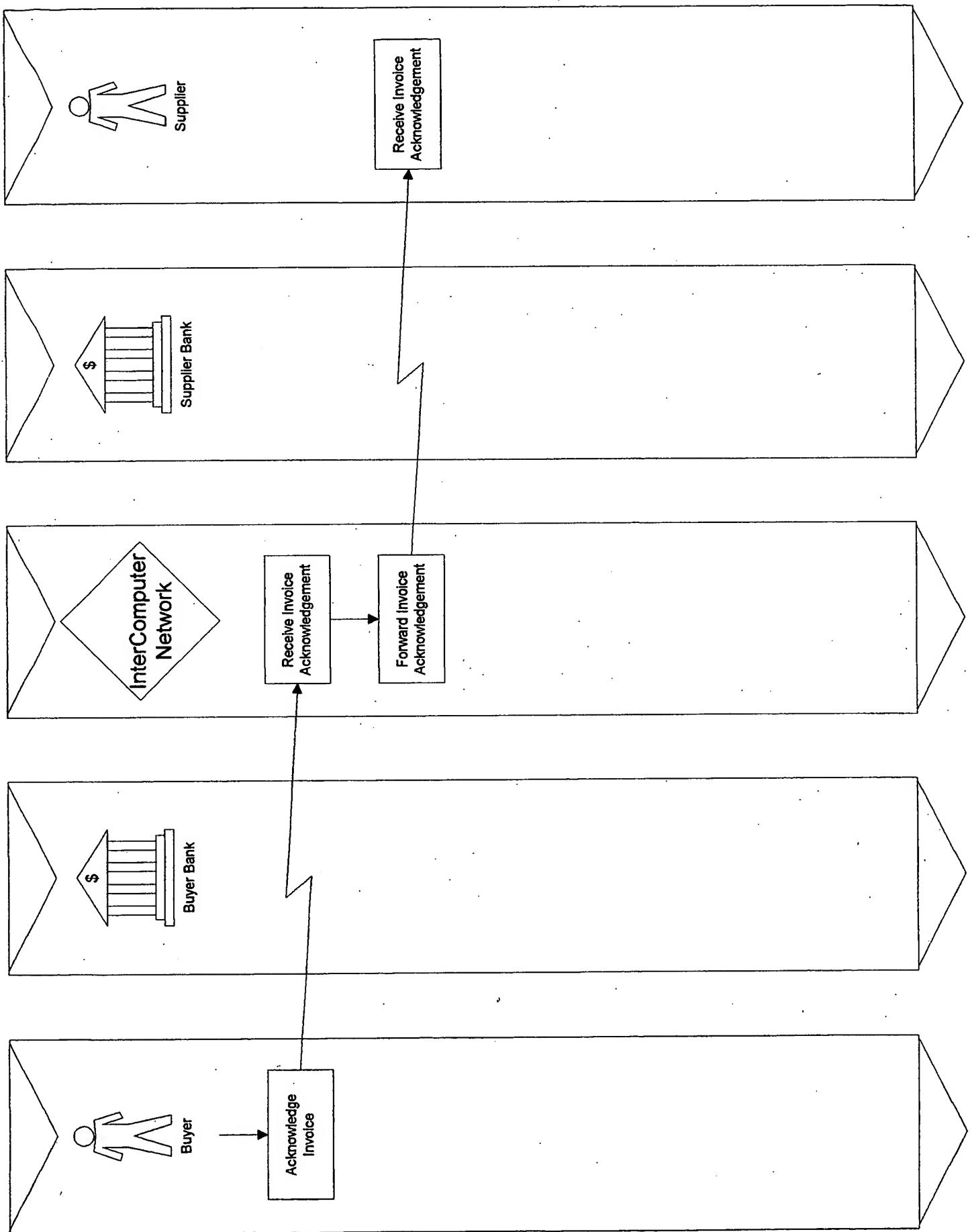


Figure 26

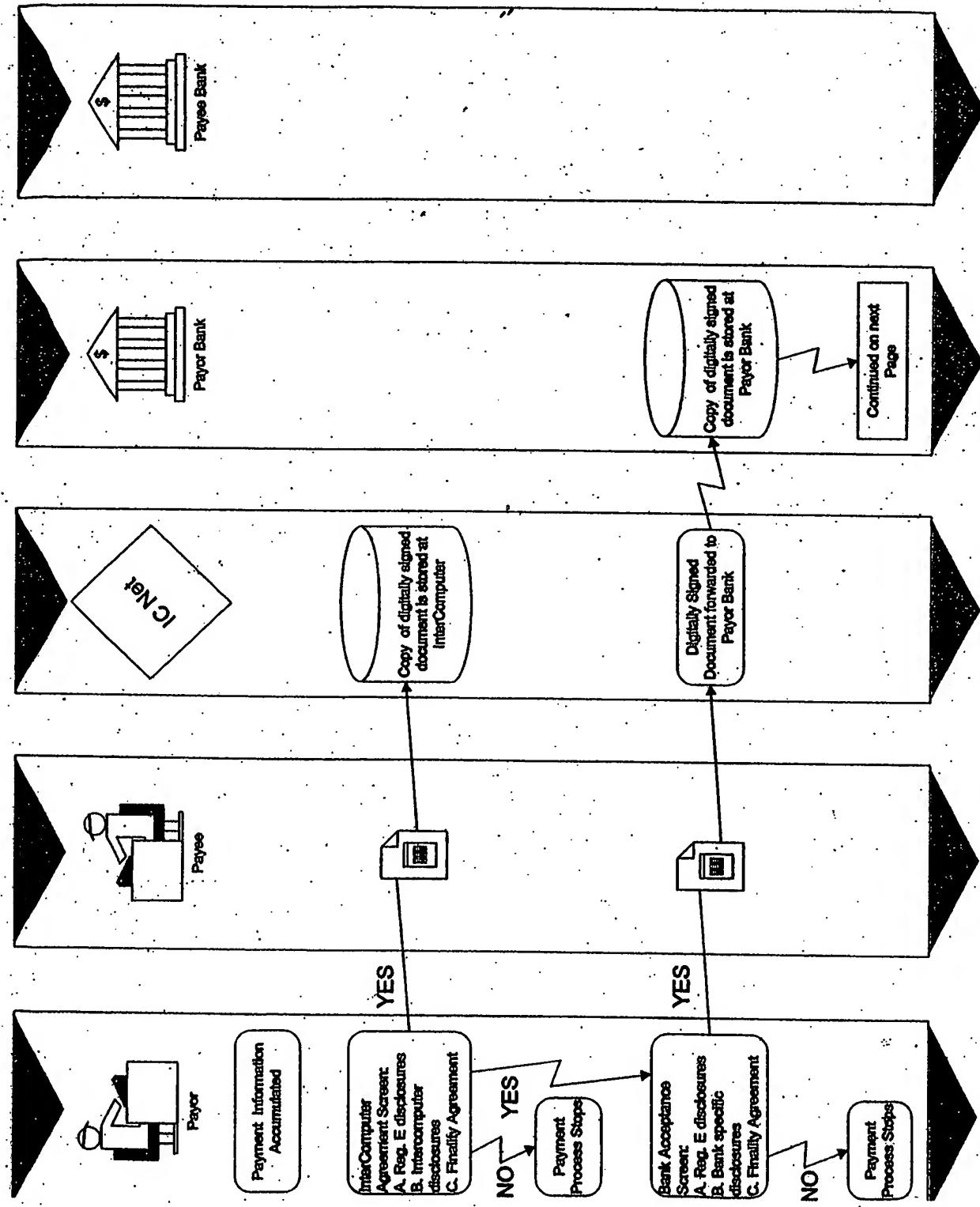


Figure 26-2

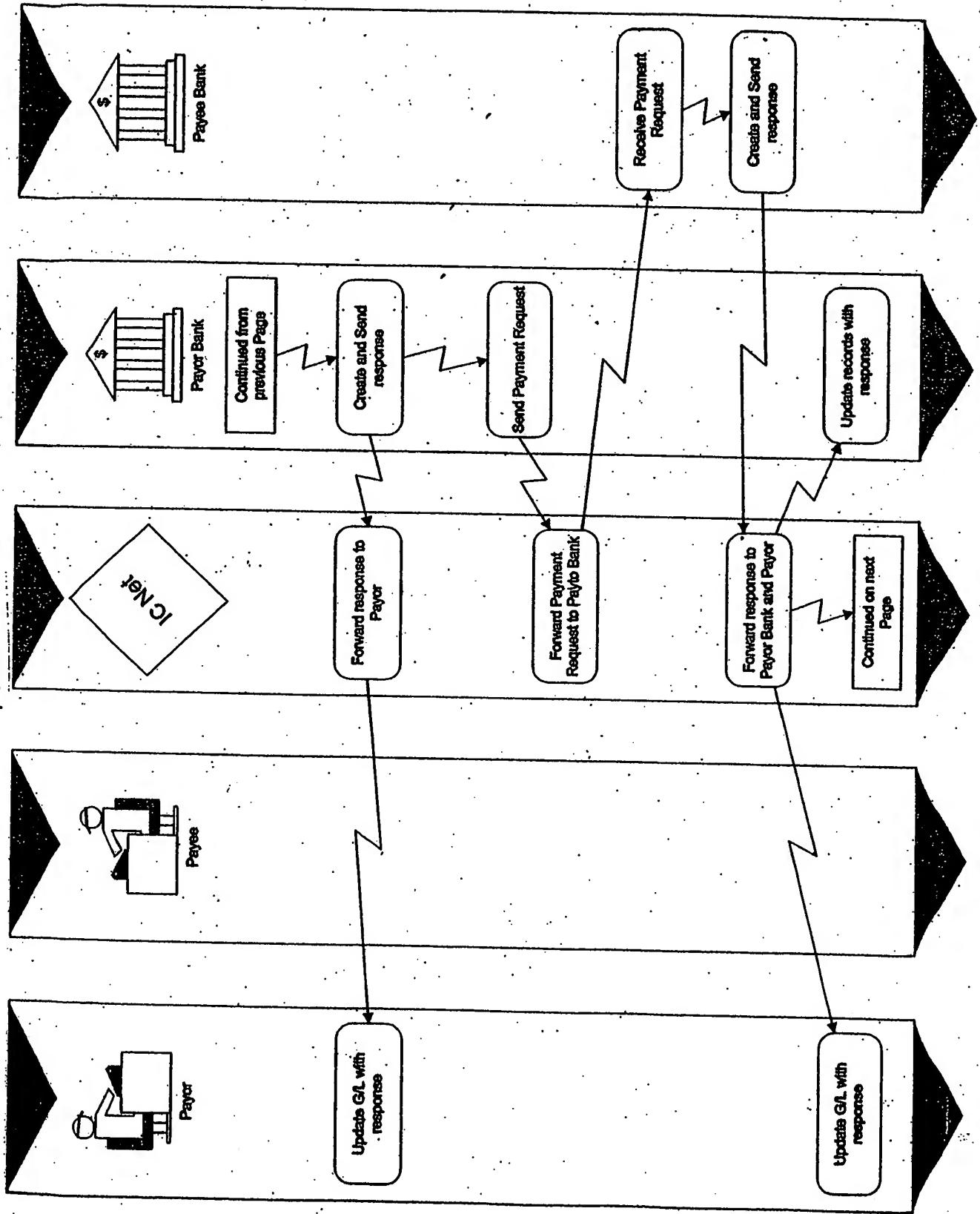


Figure 26-3

